ATTACHMENT A
REMARKS

Considering the matters raised in the Office Action in the same order as raised, the drawings have been "objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: in FIG. 2 the label "CRDU" is not defined in the specification."

In order to overcome this objection, the specification has been amended to refer to "CRDU" as well as "CRFU" which is also shown in Figure 2. It is noted that the former refers to "car radio distribution unit" while the latter refers to "car radio frequency unit" as indicated at lines 3-5 of page 6. These lines of page 6 have been amended to add CRDU after "car radio distribution unit" (at line 4) and CRFU after "car radio frequency unit" (at line 5). With these changes in the specification, correction of the drawings is unnecessary, and withdrawal of the objection to the drawings is respectfully requested.

The specification has been objected to because of a number of informalities. First, the correction noted at line 18 of page 1 has been made and the Examiner is thanked for the assistance provided in this regard.

With respect to the use of "the or each ..." at line 24 of page 4, it is respectfully submitted that this usage is common and is, in fact, appropriate here given that the specification provides that the antennas can be associated either with common transceiver equipment or with distinct or separate pieces of equipment. However, to eliminate any ambiguity, the line in question has been clarified.

With respect to the objection raised regarding line 16 of page 6, a comma has been provided as suggested by the Examiner. Again, the assistance of the Examiner is appreciated.

Finally, with respect to the objection to the time frame table, it is respectfully submitted that no correction is needed here because the complete passage in question reads "12 messages in 200 bit frames ..." and thus the word "bit" does not require an "s" to be grammatical correct.

Turning to the objections to the claims, claim 6 has been objected to because of a particular informality concerning the recitation "'the' train." It is agreed that the

Examiner is correct here and claim 6 has been amended to clarify the recitation in question and to correct another potential problem with respect to the separate recitations of "the train" and "the trains."

Turning to the rejections on prior art, claims 1-3 have been rejected under 35 USC 103(a) as being unpatentable over Maki et al ("Maki") in view of Andersson et al ("Andersson"). Claims 4-8 have been rejected based on the same combination of references in view of at least one further reference. These rejections are respectfully traversed.

As discussed in the introductory portion of this application, the present invention concerns cellular systems for transmitting information by radio between an infrastructure and moving bodies constrained to travel on a predetermined path. While the invention is not limited to this application, a major application thereof is in the field of transportation and, in particular, in connection with railway networks that include at least one tunnel along the network. It will be appreciated that multiple reflections are a particular problem in tunnels and like structures. However, it is to be understood that, as stated in the specification, the invention is also applicable to other fields including communications with aircraft in flight or on the ground which follow well determined paths or itineraries. Although systems are known which provide some protection against interference, the present invention is particularly concerned with increasing interference immunity.

As is also discussed in the introductory portion of this application and as set forth in the claims, a key feature of the present invention is that the transceivers of stationary transceiver stations or "radio bases" distributed along the path of travel and allocated to successive cells, and at least one transceiver carried by a mobile, are controlled in such a manner that, while the mobile is in a given cell, exchanges between the mobile and the transceivers allocated to that cell take place on two different frequencies in alternation during two successive radio cycles. In other words, such exchanges between the mobile and the transceivers allotted to a particular cell take place in a sequence wherein during a first radio cycle, a first frequency is used, during the next successive radio cycle, a different radio frequency is used, during the next successive radio cycle, the first frequency is then used, during the next successive radio cycle, the

different radio cycle is used, and so on whereby the two different frequencies are used alternately during each of the successive radio cycles.

Turning to the references, in applying the references to the claims, and, in particular, in reading on the Maki reference the recitation that "the transceivers of the stationary stations and the transceiver carried by each mobile are controlled in such a manner that, while a mobile is in a given cell, exchanges between the mobile and the transceivers allotted to the cell take place in alternation during two successive radio cycles," the Examiner has made reference to Figure 4 and to "downlinks and uplinks of one T period between the time t0 to t1 and then a successive downlinks and uplinks of one T period between t1 to t2." The Examiner has also conceded that the Maki reference "does not specifically disclose two different frequencies."

In the rejection, Andersson is relied on as making up the deficiency of the Maki patent with respect to the use of two different frequencies. In particular, the Examiner contends that Andersson "clearly shows and discloses two different frequencies" and makes particular reference to "FIG. 1b (c1) and (k1)" and to column 4, lines 66 and 67 and column 5, lines 1-4.

The lines to which the Examiner has referred relate to communication between a base station and a mobile station which "forms part of a connection set-up." The passage in question states that "[e]ach connection set-up uses two frequencies, of which one frequency is used for communication from the mobile station to the base station, the so-called uplink, while the other frequency is used for communication from the base station to the mobile station, the so-called downlink."

The Examiner has also referred to column 5, lines 29-32, in support of the contention that it "would have been obvious to a person or ordinary skill in the art at the time of the invention was made to incorporate two frequencies taught by Andersson et al. for communicating between the base station and the mobile station in a given cell taught by Maki et al. for the purpose of avoiding interference signals for better performance." It is noted that the lines of column 5 to which the Examiner has referred concern "so-called fixed frequency division in mobile television systems," and, in particular, are concerned with avoiding interference signals between different base stations by allocating well separated frequencies to neighboring cells. It is respectfully

submitted that this has nothing to do with assigning different frequencies to the same cell. In other words, while the Andersson patent discloses the use of different frequencies for a mobile during movement thereof from one cell to a neighboring cell, there is no teaching in Andersson with respect to providing different, alternating frequencies within the same cell.

It is respectfully submitted that even if the Maki and Andersson patents were combined as proposed by the Examiner, and assuming for the sake of argument that the combination is a valid combination not based on hindsight, claim 1 patentably defines over the resultant hybrid combination. In this hybrid combination, as proposed by the Examiner, a first frequency would be used during a downlink transmission while a second, different frequency would be used during an uplink transmission. However, this is clearly not what is claimed in claim 1. Claim 1 requires that exchanges between the mobile and the transceivers allotted to the given single cell take place in alternation between two successive radio cycles. This is simply not the same thing as using different frequencies during uplink and downlink transmissions. It is respectfully submitted that the combination proposed by the Examiner would not provide the clamed solution for the problem of interference occurring within a single cell, i.e., would not provide for exchanges to take place in alternation between two successive radio cycles between at least one mobile and transceiver stations allocated to the cell located along the path of travel (e.g., in connection with a train traveling through a tunnel). In this regard, as indicated above, and as is set forth in the paragraph bridging pages 1 and 2 of the application and the first full paragraph on page 2, the cellular system of the present invention provides robust protection against external interference within a cell and such is the case even if more than one train is moving in the same cell, so that the transmission of one train can be disturbed by interference from another (see Figures 1, 2 and 7, and the related description thereof). It is respectfully submitted that the Maki and Andersson patents do not deal with the problems solved by the present invention and, again, simply do not disclose the present invention as claimed in claim 1 even if combined as proposed.

With respect to the dependent claims, these claims are patentable for at least the reasons set forth above in support of parent claim 1.

Allowance of the application in its present form is respectfully solicited.

END REMARKS